Company Name:	MH Industries, LLC	**Permit Writer:**	Utpal B. Patel
Permit Number:	2060-0540-CA	**Date:**	DRAFT

EXPEDITED REVIEW: Yes

DATE APPLICATION RECEIVED: February 11 and 17, 2016

DATE OF OCRM APPROVAL: N/A

FACILITY DESCRIPTION: MH Industries, LLC is a new plastic automotive parts manufacturing facility in Greer, South Carolina. The facility manufacture and/or paint bumpers, spoilers and seat parts for automobiles. The primary process equipment includes thermoplastic injection molders, paint booths and curing ovens.

PROJECT DESCRIPTION: The facility is applying for a synthetic minor construction permit to construct the following sources:
Painting Operation:
(1) Paint Mixing and surface treatment of the parts by flaming. Paint Mixing area by-passes RTO and exhausts through RTO stack un-controlled. Flaming process emissions are controlled by RTO. Phase 1: Wiping with IPA (manual cleaning) emits only VOC and are un-controlled
(2) Paint Application - Two (2) coating lines: each coating line will have three (3) sections in the paint line; primer, basecoat and clear coat application. Each section has its own natural gas fired curing oven to cure paint. PM emissions from each primer, basecoat and clear coat application booth are controlled by separate 95% efficient water curtain that exhausts through single RTO. VOC and HAP emissions from Flaming, Coating Lines, Curing Ovens and Flash off areas are controlled by 99% efficient RTO.

The facility is also requesting to add following exempt sources:

(1) Four (4) Injection Molding Machines
(2) 0.56 Million Btu/hr heat input capacity natural gas fired hot water heater
(3) Parts Cleaning by Blow-Down, controlled by ESP for each coating line (PTE un-controlled PM emissions prior to ESP are less than 5 tpy)
(4) Diesel fired Emergency Generator
(5) Emergency Fire Pump

The facility is requesting a facility-wide synthetic minor limit of < 100 tpy of VOC and < 10/25 tpy of individual/ aggregate HAPs to become minor source for TV and PSD.

COLLOCATION DETERMINATION: The facility is not co-located with any other facility.

CHANGES SINCE LAST OP ISSUANCE
New Facility.

SOURCE TEST REQUIREMENTS:

SPECIAL CONDITIONS, MONITORING, LIMITS: None

EMISSIONS

UNCONTROLLED POTENTIAL EMISSIONS				
ID	**Pollutant**	**lb/hr**	**TPY**	**Method for Estimating Emissions**
01 Painting Operation*	PM / PM_{10}/ $PM_{2.5}$	4.90	22.0	AP-42 Fifth Edition, Tables 1.4-1,-2, 7/98 Update, Material Balance
01 Painting Operation*	SO_2	0.012	0.051	"
01 Painting Operation*	NOx	1.90	8.30	"
01 Painting Operation*	CO	1.20	5.10	"
01 Painting Operation*	VOC**	131.427	586.25	AP-42 Fifth Edition, Tables 1.4-1,-2, 7/98 Update, Material Balance
01 Painting Operation*	CO_2 (mass)	1300	5800	40 CFR 98, Subpart C, Table A-1, Table C-1 and Table C-2

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UNCONTROLLED POTENTIAL EMISSIONS				
ID	**Pollutant**	**lb/hr**	**TPY**	**Method for Estimating Emissions**
01 Painting Operation*	CO_2 e	1300	5800	40 CFR 98, Subpart C, Table A-1, Table C-1 and Table C-2
01 Painting Operation*	Hexane	0.02	0.086	Material Balance
01 Painting Operation*	Formaldehyde	0.20	0.86	Material Balance
01 Painting Operation*	Xylene**	37.213	165.31	Material Balance
01 Painting Operation*	Ethyl Benzene**	6.514	28.94	Material Balance
01 Painting Operation*	MIBK	3.60	16.0	Material Balance
01 Painting Operation*	Monopropylene Glycol Methyl Ether	2.90	13.0	Material Balance
01 Painting Operation*	Cumene**	0.824	3.663	Material Balance
01 Painting Operation*	HDI	0.049	0.21	Material Balance
01 Painting Operation*	Formic Acid	0.00053	0.0023	Material Balance
01 Painting Operation*	Acetaldehyde	0.00035	0.0016	Material Balance
01 Painting Operation*	MEK	0.00015	0.00064	Material Balance
01 Painting Operation*	Acrylic Acid	0.000062	0.00027	Material Balance
01 Painting Operation*	Propionaldehyde	0.000039	0.00017	Material Balance
01 Painting Operation*	Toluene	0.000037	0.00016	Material Balance
01 Painting Operation*	Acrolein	0.0000077	0.000034	Material Balance

* Total Un-controlled emissions from Painting Operation, and exempt sources (Injection Molding Machines, manual cleaning with IPA, and water heater)
** includes un-controlled emissions from cleaning solvent used to purge the coating line in each of the six coating booths in coating lines nos. 1 and 2, VOC and HAP emissions are controlled by RTO.

CONTROLLED POTENTIAL EMISSIONS				
ID	**Pollutant**	**lb/hr**	**TPY**	**Method for Estimating Emissions**
01 Painting Operation*	PM / PM_{10}/ $PM_{2.5}$	0.45	2.0	AP-42 Fifth Edition, Tables 1.4-1,-2, 7/98 Update, Material Balance
01 Painting Operation*	VOC**	10.085	45.372	AP-42 Fifth Edition, Tables 1.4-1,-2, 7/98 Update, Material Balance
01 Painting Operation*	Formaldehyde	0.013	0.058	Material Balance
01 Painting Operation*	Xylene**	2.272	9.816	Material Balance
01 Painting Operation*	Ethyl Benzene**	0.393	1.756	Material Balance
01 Painting Operation*	MIBK	0.21	0.94	Material Balance
01 Painting Operation*	Monopropylene Glycol Methyl Ether	0.18	0.78	Material Balance
01 Painting Operation*	Cumene**	0.0499	0.2137	Material Balance
01 Painting Operation*	HDI	0.003	0.013	Material Balance

* Total Controlled emissions from Painting Operation
** includes controlled emissions from cleaning solvent used to purge the coating line in each of the six coating booths in coating lines nos. 1 and 2, VOC and HAP emissions are controlled by RTO.

FACILITY WIDE EMISSIONS		
Pollutant	**Uncontrolled Emissions**	**Controlled Emissions**
	TPY	**TPY**
PM / PM_{10}/ $PM_{2.5}$	22.0	2.0
SO_2	0.051	N/A

FACILITY WIDE EMISSIONS		
Pollutant	**Uncontrolled Emissions**	**Controlled Emissions**
	TPY	**TPY**
NOx	8.30	N/A
CO	5.10	N/A
VOC	586.25	<100*
CO_2 (mass)	5800	N/A
CO_2 e	5800	N/A
Highest HAP (Xylene)	165.31	<10*
Total HAPs	226.31	<25*

* The bumper production capacity is limited by the cycle times of the injection molding machines and the speed of the painting/coating line conveyors. Bumpers can be produced by each injection molding machine at a maximum rate of 60 bumpers per hour. There are four (4) injection molding machines. The paint line capacity is based on the number of pallets that can be conveyed through the coating line and the number of bumpers per pallet. A pallet can support a maximum of four (4) bumpers and can be conveyed at a maximum rate of fifteen (15) pallets per hour. Thus the maximum painting production is 60 bumpers per hour per coating line. There will be two coating lines installed at the completion of Phase 2 and these are included in this application. The potential to emit (PTE) emissions for the facility are comprised primarily of the sum of the painting operation emissions and injection molding emissions at their maximum production rates. Emissions of VOC and HAP will exceed major source thresholds if uncontrolled. Therefore, MHI will take a federally enforceable limit on VOC emissions of 100 TPY and HAP emissions of 10 TPY (individual HAP) and 25 TPY (Combined HAP).

Paint Line Emission Calculations

For calculating emissions from the paint line, it is assumed that 95% of the VOC content of the coatings is captured in the vapor collection system and directed to a RTO with a VOC destruction efficiency of 99%. Potential to Emit (PTE) calculations were conducted as follows:

Uncontrolled

Paint Robot # (ESRl -ESR6)
=E (Application Rate of Robot (gal/min) * Percent Composition of Component

* 60 min/hr * 8760 hrs/yr * Paint Density lb/gal * Weight Percent of Air Pollutant)

/ (2000 lb/ton) = Uncontrolled Emissions of Air Pollutant (tons/yr)

Controlled

Paint Robot # (ESR1-ESR6) = Uncontrolled Emissions of Air Pollutant (tons/yr) *

(1-(Percent Destruction Efficiency) * (Percent Capture Efficiency)) =

Controlled Emissions of Air Pollutant (tons/yr)

Additional assumptions include:

- Robot spray coating application rate is set to the recommended specifications for mixed gallons applied (in cubic centimeters per part) for PTE calculations.

The maximum production rate (PTE scenario) consists of 60 bumpers/hour throughput receiving all three coating types. To account for small differences in paint composition, emissions equivalent to an additional 10 bumpers per hour, primed only, were added to the total emissions. Spoiler production throughput rates are the same, but since bumpers require an additional volume of paint on a per part basis, bumpers have been used exclusively for PTE calculations.

- Where coating composition information was incomplete, PTE emissions calculations are based on the maximum expected values from similar paints and thinners used in this industry.

HAPs

• • Retarder thinner was assumed to be 85% xylene and have concentrations of up to 1% for cumene and 15% for ethyl benzene.

VOCS

- Curing agent was set to 100% VOC content by weight.
- Retarder thinner was set to 100% VOC content by weight.
- Retarder thinner density was set to 7.2 Ibs/gallon.

• Destruction efficiency for the RTO is 99% for VOCs and HAPs. Installed equipment will be a DURR Model RL25 Rotary Vane RTO or equivalent.

OPERATING PERMIT STATUS: The facility is applying for a synthetic minor permit to avoid being subject to TV and PSD and will apply for Conditional major permit.

REGULATORY APPLICABILITY REVIEW

Regulation	Comments/Periodic Monitoring Requirements
Section II.E - Synthetic Minor	The facility is potentially major source for VOC, Individual HAP and Aggregate HAPs but are taking facility-wide federally enforceable limit to stay below <100 tons of VOC, 10 tons of Individual HAP and 25 tons of Aggregate HAPs to avoid being subject to TV and PSD.
Standard No. 1	Two (2) 0.18 Million Btu/hr each natural gas fired Flame treatment burners and six(6) 1.71 Million Btu/hr each Drying Ovens have their own separate fuel burning stacks and these fuel burning emissions are not routed through RTO; therefore, these unit's fuel burning stacks are subject to this regulation for PM, SO_2 and Opacity.
Standard No. 3 (state only)	The process emissions from each of the two painting lines (each lines consists of Flaming process, primer booth, primer drying oven, basecoat booth, basecoat drying oven, clear coat booth, clear coat drying oven, and flash off area) exhaust through single RTO. RTO will be subject to PM and opacity limit. PM emissions from each of the three sections (primer, basecoat and clear coat) of each paint line are controlled by separate water curtain for each section (total 6 water curtains for two lines) and these water curtains exhaust through single RTO. Paint Mixing area by-passes RTO and exhausts through RTO stack un-controlled. The Thermal Oxidizer will be classified as an industrial incinerator for the purpose of this standard. The Thermal Oxidizer is subject to the opacity and PM limit specified in Section III (I). Compliance with the PM limit is determined by conducting a performance test. Section VIIII (D) (5) requires that a performance test be conducted every 2 years for PM emissions from industrial incinerators but Section VIIII (A) contains a provision that allows the Department to waive a test. The performance test for PM emissions was waived because this facility will not use thermal oxidizer to control PM emissions. This facility is required to keep records as specified by Section VI(C). This facility is not required to submit reports as specified by Section VI (D) because these only apply to sources incinerating hazardous or municipal waste. Per Section V (G) (1) and Section V (G) (2), this facility is not required to conduct waste analyses for the Thermal Oxidizer. Section VI(A)(2)(h) states that continuous monitoring for industrial incinerators may be required as in Section VII(A)(2)(d) (Hazardous Waste) or Section VI(A)(2)(e) (Municipal Waste) depending on

Regulation	Comments/Periodic Monitoring Requirements
	the material being incinerated or burned and source test results. Since the waste being incinerated is not a hazardous or municipal waste, monitoring is not required under either of these sections. (S.C. Regulation 61-62.5, Standard No. 3, Section IX.D) An exemption from all of the Operator Training Requirements in S.C. Regulations 61-62.5, Standard No. 3, and Section IX.C has been granted for RTO.
Standard No. 4	Paint Mixing area by-passes RTO and exhausts through RTO stack un-controlled.; therefore, mixing room emissions are subject to 20% opacity. No Process PM; therefore, no PM limit. VOC emissions from Phase 1: Wiping with IPA (manual cleaning) are subject to 20% opacity limit from this standard. Only VOC emissions PM emissions from each of the three sections (primer, basecoat and clear coat) of each paint line are controlled by separate water curtain for each sections (total 6 water curtains for two lines) and these water curtains exhaust through single RTO. Each of the paint line will be subject to PM and Opacity limit from this standard. PM limit of 1.95 lb/hr is based on process weight rate of 0.331 tph each. The facility is using water curtains to control PM emissions. Process emissions from flaming processes, drying ovens and flash off areas are also controlled by RTO; therefore, not subject to this standard.
Standard No. 5	This facility was not in existence in 1979 or 1980. None of the processes, which are regulated by the regulation, apply.
Standard No. 5.2	Two (2) 0.18 Million Btu/hr each natural gas fired Flame treatment burners, six(6) 1.71 Million Btu/hr each natural gas fired Drying Ovens and one(1) 0.56 Million Btu/hr natural gas fired hot water heater are less than 10 Million Btu/hr; therefore, are exempt from this standard.
Standard No. 7	The facility's PTE for VOC is greater than 250 tpy but the facility is taking a facility-wide federally enforceable limit to stay below 100 tons per year of VOC to avoid being major for TV and PSD. The facility is not one of the 28 source category source.
61-62.6	Fugitive PM (dust) emissions are controlled in a manner that should not produce undesirable levels of PM emissions.
40 CFR 60 and 61-62.60	The facility is not subject to subpart MM (New Source Performance Standard for Automobile and Light Duty Truck Surface Coating Operations) because 60.390(b) exempts operations that are used to coat plastic body components or all plastic automobile or light duty truck bodies on separate coating lines. The facility is not subject to subpart Kb (New Source Performance Standard for Storage Vessels) because facility will not install and operate any tanks for the storage of VOL with a capacity greater than19,813 gallons The facility is subject to subpart IIII (New Source Performance Standard for Stationary Compression Ignition Internal Combustion Engines) for diesel fired emergency generators.
40 CFR 61 and 61-62.61	This facility does not contain any processes/operations that emit the pollutants subject to this standard (asbestos, benzene, beryllium, coke oven emissions, arsenic, mercury, radio nuclide, radon, or vinyl chloride).
40 CFR 63 and 61-62.63	This facility is potentially major source of HAP emissions but the facility is taking a facility-wide federally enforceable limit to stay below 10 tons of Individual HAP and 25 tons of Aggregate HAPs to become minor source of HAP.

Regulation	Comments/Periodic Monitoring Requirements
	40 CFR 63 Subpart IIII -National Emission Standards for Hazardous Air Pollutants: Surface Coating of Automobiles and Light-Duty Trucks Not Applicable - As a minor source of HAP, the facility is not subject to this subpart. **40 CFR 63 Subpart HHHHHH (6H) -National Emission Standards for Hazardous Air Pollutants: Auto Body Refinishing (Area Sources)** Not Applicable -While this regulation applies to miscellaneous surface coating operations at Area Sources, it is only for facilities that use coating containing chromium, lead, manganese, nickel or cadmium. The safety Data Sheets for the coatings used by MHI do not list any of these HAPs as part of the coatings' composition. **40 CFR 63 Subpart JJJJJJ (6J) -National Emission Standards for Hazardous Air Pollutants: Industrial, Commercial, and Institutional Boilers Area Sources** Not applicable -Subpart JJJJJJ applies to facilities that have boilers or process heaters located at area sources. Boilers and process heaters that are gas-fueled only are not subject to this Subpart. **40 CFR 63 Subpart XXXXXX (6X) - National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Nine Metal Fabrication and Finishing Source Categories** Not applicable -None of the following activities regulated by Subpart XXXXXX will occur at the facility, nor does the facility propose to install and operate any of the activities described by these categories: • Pipe Fittings Electrical and Electronic Equipment Finishing Operations; • Fabricated Metal Products; • Fabricated Plate Work (Boiler Shops); • Fabricated Structural Metal Manufacturing; • Heating Equipment, except Electric; • Industrial Machinery and Equipment Finishing Operations; • Iron and Steel Forging; • Primary Metal Products Manufacturing; and • Valves. **40 CFR 63 Subpart PPPP -National Emission Standards for Hazardous Air Pollutants: Surface Coating of Plastic Parts and Products** This Subpart is not applicable to the proposed paint line as the facility will not be a major source. Area sources are not subject to Subpart PPPP. **40 CFR 63 Subpart ZZZZ -National Emission Standards For Hazardous Air Pollutants: Stationary Reciprocating Internal Combustion Engines** The facility will be subject to this subpart for emergency generators. **40 CFR 63 Subpart CCCCCCC (7C) -National Emission Standards for Hazardous Air Pollutants for Area Sources: Paints and Allied Products Manufacturing** Not applicable -Subpart CCCCCCC states that "Paints and allied products manufacturing does not include: Activities by end users of paints or allied products to ready those materials for application." The facility will only mix paints prior to use; therefore, this regulation does not apply.
61-62.68	The facility does not store any listed chemical above threshold quantity.

Regulation	Comments/Periodic Monitoring Requirements
40 CFR 64	The facility is not a TV facility; therefore, not subject to this regulation.

AMBIENT AIR STANDARDS REVIEW

Regulation	Comments/Periodic Monitoring Requirements
Standard No. 2	This facility has demonstrated compliance through modeling; see modeling summary dated March 2, 2016. No operational restriction has been established to ensure compliance with the modeled emission rates.
Standard No. 7.c	This facility has demonstrated compliance through modeling; see modeling summary dated March 2, 2016.
Standard No. 8 (state only)	This facility has demonstrated compliance through modeling; see modeling summary dated March 2, 2016.

PUBLIC NOTICE
This construction permit will undergo a 30-day public notice period to establish synthetic minor limits in accordance with SC Regulation 61-62.1, Section II.N. This permit was placed on the DHEC Public Notice Website on March 14, 2016. The comment period was open from March 14, 2016 to April 12, 2016 and was placed on the BAQ website during that time period.

ADDITIONAL PUBLIC PARTICIPATION: No additional public participation required.

SUMMARY AND CONCLUSIONS
It has been determined that this source, if operated in accordance with the submitted application, will meet all applicable requirements and emission standards.